

## Rust on Asian *Rubus* - *Gerwasia rubi*

Species of blackberry or *Rubus* are attacked by a number of species of rust fungi many of which occur only in South America or Asia and thus are potentially invasive on North American species of *Rubus*. *Gerwasia rubi* is widespread in Asia and has been reported once in the western hemisphere (Mexico). *Gerwasia rubi* is unlike *G. imperialis* in that *G. rubi* commonly produces uredinia and telia. The orange yellowish uredinia of *G. rubi* develop on the upper surface of leaves as solitary or a few aggregated, small, yellow or purple, rounded spots. This fungus is similar to *Gerwasia Rosae* in the shape of the teliospores but the latter occurs only on *Rosa spp.*

***Gerwasia rubi*** Racib. 1909

**Spermogonia** intraepidermal.

**Aecia** like uredinia.

**Uredinia** epiphyllous (on upper surface of leaf), solitary or a few aggregated on small yellow or purple spots, small, rounded, 0.1-0.3 mm diam, covered by epidermis, orange yellow, reddish brown or yellowish brown; urediniospores globose, ovate or ovate-ellipsoid, sparsely echinulate, hyaline or pale yellowish, 22-35 × 16-26 µm, wall 2-3 µm thick.

**Telia** hypophyllous (on lower side of leaf), white, developing in minute, rounded, yellow lesions; teliospores formed on cells emerging through stomata, globose, short-pedicellate, 20-30 × 18-22 µm, walls smooth, thin, hyaline.

See Hirastuka et al. (1992) and Ito (1950) for a more detailed description.

**Hosts:** Known on various species of *Rubus* including *Rubus adenotrichos* Schltl., *R. alcaefolius* Poir., *R. amphidasys* Focke, *R. amplifolius* P.J.Müll., *R. angulosus* Greml., *R. buergeri* Miq., *R. cochinchinensis* Tratt., *R. formosensis* Kuntze, *R. hypopitys* Focke, *R. laciniatostipulatus* Hayata ex Koidzumi, *R. multibracteatus* H. Lév. & Vaniot, *R. palmatus* Thunb., *R. pinnatisepalus* Hemsl., *R. reflexus* Ker Gawl., *R. reflexus* var. *lanceolatus* F.P. Metcalf, *R. setchuenensis* Bureau & Franch., *R. shimadai* Hayata, *R. swinhoei* Hance

**Geographic distribution:** Widespread in Asia, reported from China (Fujian, Tai, 1979, Guangxi, Teng, 1996, Guizhou, Tai, 1979, Hainan, Teng, 1996, Hong Kong, Berkeley & Curtis, 1859, Hunan, Tai, 1979, Sichuan, Tai, 1979, Teng, 1996), Indonesia (Jorstad, 1959, Java, Raciborski, 1909); Japan (Honshu, Kyushu, Shikoku, Hiratsuka et al., 1992); Nepal (Zhuang & Wei, 1999), Thailand (Gjaerum, 1995) and Vietnam (Kaneko et al. 2007). A recent report from Mexico (Gallego & Cummins, 1981) is questionable.

The hosts of *Gerwasia rubi* are primarily native Asian species of *Rubus* but exotic germplasm for breeding imported into North America may be infected with this rust.

### References:

- Arthur, J.C., and Cummins, G.B.** 1936. Philippine rusts in the Clemens collection 1923-1926, II. Philipp. J. Sci. 61: 463-488.
- Berkeley, M.J., and Curtis, M.A.** 1859. Characters of new fungi, collected in the North Pacific exploring expedition by Charles Wright. . Proc. Amer. Acad. Arts. 4: 111-130.
- Dietel, V.P.** 1912. Ueber die Verwandtschaftsbeziehungen der Rost ilzgattungen *Kuehneola* and *Phragmidium*. . Ann. Mycol. 10: 205-213.
- Gallegos, M.L., and Cummins, G.B.** 1981. Uredinales (royas) de Mexico, Vol. 2. Instituto Nacional de Investigaciones Agricolas, Culiacan, Sinaloa, Mexico, 492 pages.
- Gjaerum, H.B.** 1995. Rust fungi from various countries. Lidia 3: 145-170.
- Hiratsuka, N.** 1939. Miscellaneous notes on the east-Asiatic Uredinales with special reference to the Japanese species (VI.). J. Jap. Bot. 15: 621-627.
- Ito, S.** 1950. Mycological Flora of Japan. Vol. II. Basidiomycetes. No. 3. Uredinales -- Pucciniaceae. Uredinales Imperfecti. Yokendo Ltd., Tokyo, 435 pages.
- Jorstad, I.** 1959. Notes on some Asiatic Uredinales. Nytt Mag. Bot. 7: 129-144.
- Kaneko, S., Pham, T. Q., and Hiratsuka, Y.** 2007. Notes on some rust fungi in Vietnam. Mycoscience 48: 263-265.
- Raciborski, M.** 1909. Ueber einige javanische Uredineae. Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1909: 266-280.
- Tai, F.L.** 1947. Uredinales of Western China. Farlowia 3 : 95-139.
- Zhuang, J.-Y.** 1983. [A provisional list of Uredinales of Fujian Province, China.]. Acta Mycol. Sin. 2: 146-158.

**Zhuang, J.-Y., and Wei, S.-X.** 1999. Fungal flora of tropical Guangxi, China: a preliminary checklist of rust fungi. *Mycotaxon* 72: 377-388.

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Uredinia of *Gerwasia rubi* on *Rubus buergeri* Miq. ( $\times 6$ )



Urediniospores of *Gerwasia rubi* on *Rubus buergeri* Miq.  
by LM ( $\times 400$ , Scale bar:  $30 \frac{1}{4}m$ )

